

CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

This material contains information affecting the National Defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C. Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

25X1

CONFIDENTIAL

COUNTRY	Korea	REPORT	
SUBJECT	Hwanghae Province Iron Works, North Korea	DATE DISTR.	21 October 1954
DATE OF INFO.		NO. OF PAGES	5
PLACE ACQUIRED		REQUIREMENT	
		REFERENCES	

This is UNEVALUATED Information

THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

25X1

1. By mid-July 1954 the Hwanghae Province Iron Works in Songnim (N 38-45, L 125-37) (YC2790) had been approximately 70 to 80 percent rebuilt and repaired with the exception of the steel production plant which was only about 50 percent completed. Machinery such as cranes, lathes, and locomotives is being imported from foreign countries, primarily from the USSR. Minor machinery needed for reconstruction is received from North Korean factories. As a result of hasty reconstruction and lack of qualified technicians, the iron works facilities are frequently out of order.
2. Iron ore is brought to the iron works from the Songnim station via a single-track railroad to the ore preparation mill at YC280904. At the mill is a two-story building, 25 meters long, 10 meters wide, and 8 meters high. The walls are built of zinc plate, earth, and brick, and the pyramid-style roof is zinc plate. About 70 percent of the mill has been rebuilt. The iron ore is either stored in bins 30-meters long on both sides of the railroad track, which is 4.5 meters above ground, or dropped directly from the rail cars onto continuous conveyors along the track. These carry the ore into the mill where it is washed in water, crushed by machine, and sorted by a magnetic screening apparatus. The iron ore thus screened is then moved into the first and second blast furnaces by conveyors while the refuse is removed to the beach area by train. Untreated iron ore is brought in from the Chaeryong, the Suan, the Hol-dong, the Makyon, and the Masong mines in Hwanghae Province. Screened iron ore comes from the Koksan iron mine. Because of the inadequacy of the rail transportation system in North Korea, the amount of iron ore brought into Songnim each day varies, although the authorities are endeavoring to have a specified amount of ore brought in monthly.
3. About 70 percent of the coke plant has been rebuilt. There are three ovens, of which two are in operation and the other under repair. The elevated rail tracks are about 70 percent repaired. The daily production of 60 tons of coke goes to the blast furnaces by conveyors. Coke powder is also produced. Some of the

CONFIDENTIAL

25X1

STATE	X	ARMY	Ev	X	NAVY	X	AIR	X	FBI		AEC		ORR	Ev	X
-------	---	------	----	---	------	---	-----	---	-----	--	-----	--	-----	----	---

CONFIDENTIAL

25X1

- 2 -

coal used at the plant is brought by Soviet transport from the Fushun Mine (N 41-53, L 123-54) in Manchuria; the rest is brought by train from the Sariwon mine in Hwanghae Province and from the Aoji (FC-1108), the Kokonwon, and the Sinyuson mines in North Hamgyong Province.² The imported coal is stored in an open area near the pier while the domestic coal is stored about 50 meters southwest of the Songnim station. On 15 July, 300 tons of imported coal were observed and about 1,000 tons of domestic coal. Ammonium was observed, produced near the coke plant.

4. The first blast furnace has been completely repaired. The interior of the furnace is five meters wide and six meters deep, the over-all height of the furnace being about 18 meters. The steel of the furnace is five centimeters thick, the firebrick lining, which can withstand 4,000-degree heat, is 30 centimeters thick. The furnace is charged with ore and coke from the ore preparation mill and from the coke plant by conveyors. Although the conveyors are supposed to provide a continuous charge of ore and coke into the furnace, 30 to 100-minute breakdowns occur three or four times daily. Eight-hundred-degree³ air is blown into the furnace. Some of the iron is cast into molds for steel, 3 centimeters thick and measuring 50 by 35 by 20 centimeters, which are placed in two rows on conveyors and moved about 15 meters away to be dropped on the sandy ground or into open cars which carry the molds to the steel production plant where the iron is made into steel ingots. The rest of the iron flows out of the furnace through a different outlet, is poured into oven-shaped ladles on flat cars and sent to the open hearth furnace. The ladles, which measure on the inside one meter in diameter and one meter in depth, have a thickness of three centimeters of steel and ten centimeters of fireproof brick. Every 24 hours about 40 tons of molten iron are sent to the open hearth furnace and about 80 tons are cast into pigs and sent to the steel production plant. The second blast furnace is operating 24 hours daily. The blowing engine, the furnace lid, and the gas pipes, though serviceable, are still under repair. About 20 tons are sent to the open hearth furnace and about 40 to the steel production plant. The third blast furnace has not been repaired.
5. At the open-hearth furnace are four ovens, 1.5 meters apart and 2.5 meters above ground, and four 35-horsepower motors. Only two ovens and two motors are in usable condition, the others are under repair. The interior diameter of the ovens is 1.5 meters and the depth is one meter. The ovens are made of steel 5 centimeters thick with fireproof brick lining 10 centimeters thick and capable of withstanding 4,000-degree heat.³ There is one 15-ton traveling crane at the furnace. In a 24-hour period the furnace produces ten 3-ton ingots measuring 1.5 by 0.7 by 0.7 meters and six 5-ton ingots measuring 1.5 by 1 by 1 meters. Five of the 3-ton ingots are made by casting the molten iron into sand and clay molds. When the iron has cooled, it is put into the ovens for 24 hours, then poured into ladles to be cast into square sand molds. The other 3-ton ingots and the 5-ton ingots are made by pouring the molten iron from the blast furnace directly into the molds. A laborer can make by hand a sand and clay mold in 10 to 15 minutes. The ingots made at the open hearth furnace are moved to open storage areas at the pier for shipment to the USSR. None of these ingots is shipped out by train.
6. Of the former three cranes and six ovens at the steel production plant, only one 15-ton crane and two furnaces are operative. There are two motors at this installation. Faucet facilities are not completed. It is planned to complete reconstruction by 15 August 1954.⁴ The furnaces are charged with molten pig iron from the blast furnaces by the crane and are tapped twice each 24 hours. The flowing steel is poured into the ladle of the crane and is then cast into ingots in square sand molds. Daily production is twenty 3-ton steel ingots and ten 5-ton ingots. A portion of the ingots is sent by train to the pier 1,000 meters away for export to Dairen, Manchuria. The rest of the ingots are sent by rail car to the rolling mill 150 meters distant.
7. About 80 percent of the rolling mill facilities have been rebuilt. The machine cooling systems are still under repair. There are three cranes, lifting capacity 15, 20, and 25 tons, and one 2,500 horsepower motor. The mill produces sheets measuring 3 meters long, 1.5 meters wide, and 3 centimeters thick; rails 15 meters

CONFIDENTIAL

CONFIDENTIAL

25X1

- 3 -

long, and angle iron 10 by 10 centimeters, length unknown. Inspection is thorough and there are few rejects. The sheets and some of the rails are shipped to Dairen, the rest of the rails are sent to the Songnim station by train.

8. The iron foundry consists of a cast iron shop 30 meters long, 20 meters wide, and 10 meters high; and 15 meters away a castings shop 15 meters long, 10 meters wide, and 4 meters high. The roofs and walls of the shops are built of zinc plate. The plant has been completely rebuilt. In the cast iron shop are an electric furnace, a coal and coke furnace, a 15-ton crane at the electric furnace, and a 20-ton crane at the coal and coke furnace. The over-all height of the electric furnace is about 4.5 meters. The interior is 2.5 meters in diameter and 2.5 meters in depth. The oven is made of steel 5 centimeters thick with fireproof brick lining, capable of withstanding 4,000-degree³ heat, 15 centimeters thick. There are three carbon bars at the bottom of the oven, each 1.3 meters long and 0.3 meters in diameter. A 35-horsepower motor is under the oven. Iron scraps from the rolling mill are charged into the electric furnace after they have been cut into appropriate size. The furnace is poured once daily. Sixty to 90 minutes before pouring, the furnace is also fed 7.5 kilograms of coal tar, 11 kilograms of limestone, 2 kilograms of aluminum, and 5.7 kilograms of coke for each 15 tons of scrap iron, which is the daily capacity of the furnace. The coal and coke furnace in the cast iron shop is an over-all height of 6 meters, the interior is 2 meters in diameter and 1.5 meters in depth. The oven is like that of the electric furnace. The coal and coke furnace in the castings shop is 3 meters high, the oven is 1.5 meters in diameter and 1.2 meters in depth. The amount of scrap iron and other materials charged into the coal and coke furnaces is the same as that charged into the electric furnace. The iron foundry has the following daily production capacity:

12 pipes, 3.5 meters long, 6 centimeters thick, and 25 centimeters in diameter
 15 pipes, 3.5 meters long, 5 centimeters thick, and 20 centimeters in diameter
 10 pipes, 3.5 meters long, 3 centimeters thick, and 12 centimeters in diameter
 2 rectangular ovens (sic), 5 centimeters thick, measuring 2 by 0.5 by 1 meters
 2 rectangular ovens (sic), 5 centimeters thick, measuring 1.5 by 0.5 by 0.5 meters
 Unknown number of machine accessories, shafts, gear wheels, axles, and hearths

About 70 percent of the pipes produced by the plant are shipped out by Soviet transport. The shafts and gear wheels are sent to the lathe plant for finishing. The ovens are used at the open hearth furnace.

9. In the lathe plant are 20 lathes, approximately 15 of them of Soviet manufacture. The plant is being further expanded. The workshop is 5 meters high, 20 meters long, and 10 meters wide with a pyramid-style zinc roof. The walls are zinc and concrete. The shop puts the finishing touches on the shafts, gear wheels, axles, and screws which are sent from the cast iron plant by means of manually-operated gondola cars.
10. The forging mill has been completely rebuilt. The workshop is 4 meters high, 20 meters long, and 8 meters wide, with a zinc roof but no walls. There are five hammers of varying shapes which weigh 30 kilograms each. Scrap iron and rejected articles from the rolling mill and from the cast iron plant are used for forging various types of nuts, rivets, clamps, and nails for shipbuilding.
11. About 70 percent of the facilities of the firebrick plant has been restored. The plant has 30 kilns, 3 limestone crushers, and 4 small locomotives. The interior of the kilns measures 3 meters in diameter and 2.5 meters in depth, the walls being made of 3 centimeters of steel and 15 centimeters of fireproof brick. The plant produces 46,000 bricks every four days. They are made by molding clay and lime while moist into wooden blocks and hardening them in the ovens which are kept hot for 48 hours and kept unheated for another 48 hours. Most of the bricks produced are used at the iron works, the rest are sent elsewhere in North Korea.
12. Aid goods received at the iron works from the USSR, in addition to the coal, include approximately 15 lathes, 6 locomotives, machine accessories, and 8 cranes. One crane is at the cast iron shop, one at the rolling mill, 2 at the pier, 2 at the maritime office, 1 at the steel production plant, and 1 at the harbor coal

CONFIDENTIAL

CONFIDENTIAL

- 4 -

storage.⁵ Cotton cloth has also been received. The arrival and departure of the Soviet transports is irregular. One transport arrived in early May and left in the middle of May, another arrived late in June and departed on 3 July. Of the six Soviet technicians who arrived at the iron works in August 1953, two left at the end of May 1954. A Soviet doctor has also been assigned to the iron works. In May 1954 the workers of the iron works were informed that 80,000 meters of suiting material and 50,000 pairs of work shoes as well as an unknown quantity of medicine had been received in North Korea from Bulgaria as relief articles. Only a small portion of each item has been distributed at the iron works.

13. Transportation facilities at the iron works include 16 large and 4 small locomotives, 10 or more wooden boats, 3 launches, 2 steamers, and an unknown number of trucks.
14. Approximately 5,000 laborers, in addition to the staff members⁶ and office workers, are on the iron works payroll. About 3,000 are engaged in actual iron and steel production, the rest were laborers organized into reconstruction brigades. Work in all plants is performed on an eight-hour, three-shift basis. Large-scale recruitment is under way to obtain additional workers. The majority of the new workers are farm girls who are hired through Labor Party offices, social organizations and administrative offices from village to provincial level. One reason for the many applications from farm personnel is that they believe they would be better off as factory workers with their regular food rations. Since mid-June all male laborers and office workers between the ages of 18 and 38 years have been given military training in addition to their eight hours of labor by the war veterans among the employees. The number of production employees in the various plants of the iron works is as follows:

DEPARTMENT	TOTAL	NUMBER OF LABORERS	
		MEN	WOMEN
Coke plant	430	260	170
First blast furnace	250	250	
Second blast furnace	150	150	
Open hearth furnace	100 (at the furnace)		
	120		100
	120 (on reconstruction)		
Steel production plant	300	200	100
Rolling mill	420	300	120
Foundry	350	120	230
Lathe shop	150	30	120
Forging mill	70	30	40
Brick plant	600	100	500
	(in the plant)		
	180 (at the quarry)		
	180		

15. The iron works is surrounded by barbed wire two meters high. There are twelve gates, each of which is guarded by three soldiers of the 2104th North Korean Army Unit. The guards, armed with PPSH's, change shifts four times in each 24-hour period. The employees deposit their identification cards with the guards when they go to work. The iron works was guarded by iron works employees until April 1954 when the 2104th AU arrived. Teams of two soldiers each, armed with PPSH's, patrol around the iron works at irregular intervals.
16. The headquarters of the 2104th AU, which is composed of three battalions with 300 men in each, is at the site of the former motor vehicle technical training school at YC279918. The unit commander is Major PAK Song-chae (2613/2052/0961), aged 38, a Labor Party member. One battalion has been on a hill at YC282903 in the iron works area since the end of April. The other two battalions are stationed in and around Songnim.

Comment. According to the 8 June 1954 FBIB, an appeal from the National Congress of Activist Workers to all workers, technicians, and clerks in the

CONFIDENTIAL

25X1


CONFIDENTIAL



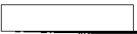
25X1

- 5 -


Heavy Industry Branch stated that the Hwanghae Iron Works, as a result of violating the rules governing technical operations in production, has been turning out a large percentage of rejects and that it has been negligent in taking care of its imported machinery.

2.  Comment. It appears doubtful that coal from North Korea is utilized in the production of coke. National Intelligence Survey 41 states that there are no coking coals in North Korea.


25X1

3.  Comment. Despite the frequent use of the metric system in this report, it is probable that this is farenheit.

25X1

4.  Comment. Informant believed that the reconstruction would not be completed until late 1954.

25X1

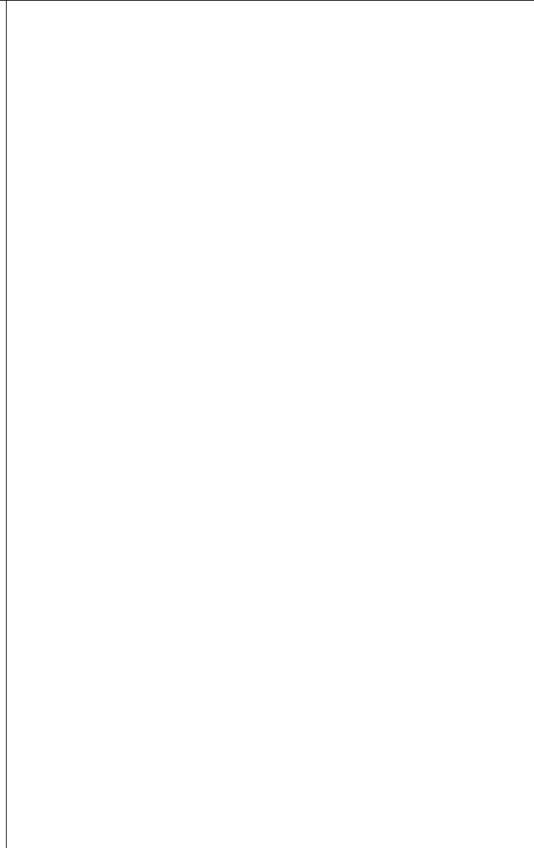
5.  Comment. The other cranes in the iron works are old ones which had been repaired.

25X1

6.



25X1



25X1

CONFIDENTIAL